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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,438	11/04/2003	Ichiro Hazeyama	KIM-01802	5649

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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,438

Applicant(s)

HAZEYAMA ET AL.

Examiner

Lynne Edmondson

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1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27, 40, 43 and 44 is/are rejected.
- 7) ☒ Claim(s) 41 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 27-32, 38, 39 and 40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 7 and 10 of U.S. Patent No. 6422452 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because both teach a ball array/transfer apparatus comprising a ball arraying apparatus or transfer apparatus (instant claim 27) (lining up apparatus, '452 claims), a ball transfer apparatus (instant claims 27, 31, 38 and 39) (ball carrying pallet or substrate, '452 claim 7), an electrolyte bath with electrolyte supply (instant claims 28 and 31) (liquid storing tank, '452 claim 7), a substrate conveying unit (instant claims 28 and 29) (pallets, '452 claim 7), a substrate table (instant claim 30, '452 pallet holder claim 7) and a ball feeder provided over the bath and feeding the balls onto the pallet (instant claims 28- 31) (applying/collecting means, '452 claim 7). The pallet table retains the pallet and changes between a horizontal and inclined position

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(instant claims 30 and 40 and '452 claim 10). The pallet comprises a drain passage for flowing out liquid (instant claim 32) (a passage to supply liquid carrier and return liquid carrier to the storing tank, '452 claim 7). However, the terms are slightly different. The substrates are pallets (instant claims 38 and 39, '452 claim 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention that although the terms are slightly different they describe means serving the same functions.

3. Claims 27, 29, 31-39, 43 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 29, 34, 35 and 37 of copending Application No. 10/105580 which is in condition for allowance. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are essentially the same but where the '580 claims use the term "pallet" the instant claims use the term substrate. The dependent claims teach that this substrate can be a pallet or wafer.

It would have been obvious to one of ordinary skill in the art at the time of the invention that although the terms are slightly different they describe means serving the same functions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 27, 31, 32, 34, 35, 38, 39, 43 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Bourrieres et al. (USPN 6533160 B1).

Bourrieres teaches a transfer apparatus comprising a ball arraying apparatus (5), a ball transfer apparatus (4) with recesses for receiving solder balls, an electrolyte (flux) bath (10), a pallet-conveying unit for dipping the substrate into the electrolyte (9) and a ball feeder (6) provided over the bath (figures 1 and 2 and col 5 line 65 – col 6 line 37). The substrate (22) is formed with drain passages (15) which connect to the recesses in the substrate when positioned under container 6 or stencil 4 and are offset when rotated to another position (figure 8a, col 7 lines 49-61).

6. Claims 27, 31-33, 38, 39, 43 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi et al. (JPN 2001-135660 A).

Takahashi teaches a transfer apparatus comprising a substrate (2) which requires a vacuum source, an array station having a pallet (4) formed with plural recesses (7) for receiving conductive bumps (solder balls 6) to be laid over pads (figure

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2a) with a driving mechanism for moving the substrate to the pallet. The transfer apparatus comprises two plates (2 and 3) with recesses fixed to one another (figure 2a). The sucking ports have a reduced area (figure 4a). The conductive bumps are received into recesses in the presence of liquid (paragraphs 69-71). The array station comprises a drain passage with a hollow space and drain holes (51,52 figure 5b).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Allowable Subject Matter

7. Claims 41 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art teaches the invention essentially as claimed but does not teach offset holes. See Inoue et al. (USPN 6460755 B1). The closest prior art teaching tilting of the pallet and use of drain holes, teaches flat solder preforms with no suggestion to use solder spheres or bumps. See Kohn (USPN 5609292).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kubota (JPN 2001-156092 A), Massiot (JPN 2001-077147 A),

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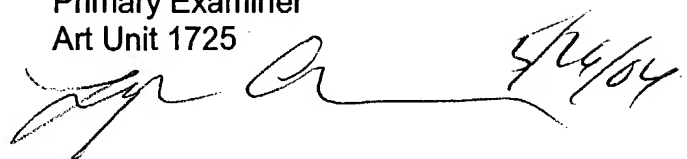
Hayashi et al. (USPN 6270002 B1), Ramos et al. (USPN 6119927), Lapastora (USPN 6112975), Link (USPN 6709469 B1), Cobbley et al. (US 2003/0121957 A1) and Cobbley (US 2003/0110626 A1).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson
Primary Examiner
Art Unit 1725



LRE